

gl-capture

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1 .gitignore

dist

2 gl-capture.cabal

```
name:                gl-capture
version:             0.1.0.0
synopsis:             simple image capture from OpenGL
description:
5   Simplify image capture from OpenGL to ByteString in PPM P6 format.

license:             BSD3
license-file:        LICENSE
author:              Claude Heiland-Allen
10  maintainer:       claud@mathr.co.uk
category:            Graphics
build-type:          Simple
cabal-version:       >=1.8

15  library
      exposed-modules: Graphics.Rendering.OpenGL.Capture
      build-depends:   base < 5, bytestring, OpenGL

source-repository head
20  type:              git
      location:         http://code.mathr.co.uk/gl-capture.git

source-repository this
25  type:              git
      location:         http://code.mathr.co.uk/gl-capture.git
      tag:              v0.1.0.0
```

3 Graphics/Rendering/OpenGL/Capture.hs

```
{- |
```

```

Module      : Graphics.Rendering.OpenGL.Capture
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5  License   : BSD3

Maintainer  : claud@mathr.co.uk
Stability   : provisional
Portability : portable
10

Simple image capture from OpenGL.

-}
module Graphics.Rendering.OpenGL.Capture (capturePPM) where
15

import Control.Monad (forM_)
import Foreign (allocaBytes, plusPtr)

import qualified Data.ByteString.Internal as BSI
20 import qualified Data.ByteString as BS
import Data.ByteString (ByteString)

import Graphics.Rendering.OpenGL

25 {- | Capture the current viewport to a ByteString in PPM P6 format.
    Correctly handles pixel alignment for oddly-sized regions.
    Corrects the image orientation so that the origin is top left.
-}
-- This is too monolithic - patches welcome.
30 capturePPM :: IO ByteString
capturePPM = do
    (p0, s0@(Size vw vh)) <- get viewport
    let p6 = "P6\n" ++ show vw ++ " " ++ show vh ++ "\n255\n"
    allocaBytes (fromIntegral (vw*vh*3)) $ \ptr -> do
35     preservingBufferBinding PixelPackBuffer $ do
        -- pack buffer needs OpenGL version >= 2.1
        bindBuffer PixelPackBuffer $= Nothing
        -- client attrib needs OpenGL version >= 1.1
        preservingClientAttrib [PixelStoreAttributes] $ do
40         -- FIXME what else needs setting to avoid crashes or bad output?
        rowAlignment Pack $= 1
        readPixels p0 s0 $ PixelData RGB UnsignedByte ptr
        px <- BSI.create (fromIntegral $ vw * vh * 3) $ \d ->
            forM_ [0..vh-1] $ \y ->
45             BSI.memcpy
                (d `plusPtr` fromIntegral (y*vw*3))
                (ptr `plusPtr` fromIntegral ((vh-1-y)*vw*3))
                (fromIntegral (vw*3))
        return $ BS.pack (map (toEnum . fromEnum) p6) `BS.append` px
50
-- This should check OpenGL version >= 2.1 - patches welcome.
preservingBufferBinding :: BufferTarget -> IO a -> IO a
preservingBufferBinding target action = do
    buffer <- get $ bindBuffer target
55    result <- action
    bindBuffer target $= buffer
    return result

```

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5 Setup.hs

```
import Distribution.Simple
main = defaultMain
```